

WHAT IS CLAIMED IS:

1. A resist polymer at least having a repeating unit having a structure which is decomposed by an acid to become soluble in an alkali developer and a repeating unit having  
5 a polar group to enhance adhesion to a substrate, characterized in that a peak area of a high molecular weight component (high polymer) with molecular weight of 100,000 or more is 0.1% or less based on an entire peak area in a molecular weight distribution determined by gel permeation  
10 chromatography (GPC).

2. The resist polymer according to claim 1, wherein said polymer is produced by radical copolymerization with retaining a solution containing polymerizable monomers and a solution containing a polymerization initiator in respec-  
15 tively independent storage tanks and supplying into a polymerization system continuously or intermittently.

3. A method for producing a resist polymer at least having a repeating unit having a structure which is decomposed by an acid to become soluble in an alkali developer  
20 and a repeat unit having a polar group to enhance adhesion to a substrate, characterized in that radical copolymerization is performed by retaining a solution containing polymerizable monomers and a solution containing a polymerization initiator in independent storage tanks respectively  
25 and supplying them into a polymerization system continu-

ously or intermittently.

4. The method for producing the resist polymer according to claim 3, wherein the solution containing the polymerizable monomers is previously heated before being supplied to polymerization system.

5. The method for producing the resist polymer according to claims 3 or 4, wherein supplying the solution containing the polymerization initiator to polymerization system is started prior to supplying the solution containing the polymerizable monomers.

6. The method for producing the resist polymer according to any of claims 3-5, wherein the solution containing the polymerizable monomers and the solution containing the polymerization initiator are mixed in a polymerization tank by continuously or intermittently supplying from the respectively independent storage tanks into a polymerization solvent heated to polymerization temperature.

7. The method for producing resist polymer according to any of claims 3-6, wherein the solution containing the polymerizable monomers and the solution containing the polymerization initiator are previously mixed just before the polymerization and then continuously or intermittently supplied into the polymerization solvent heated to the polymerization temperature.

8. The method for producing the resist polymer ac-

5 cording to any of claims 3-7, wherein supplying rate of either or both of the solution containing the polymerizable monomers and the solution containing the polymerization initiator to polymerization system, is changed by 2 or more steps.

9. The method for producing the resist polymer according to any of claims 3-8, wherein the polymerization is conducted at or above a temperature of the boiling point of polymerization solvent.

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